



6679

# 6679/12AT7

## HIGH-MU TWIN TRIODE

9-PIN MINIATURE TYPE

For use in mobile communications equipment

### GENERAL DATA

#### Electrical:

Heater, for Unipotential Cathodes:

Heater arrangement	Series	Parallel	
Voltage. . . . .	$12.6 \pm 20\%$ *	$6.3 \pm 20\%$ *	ac or dc volts
Current:			
At 12.6 volts. . .	0.15	-	amp
At 6.3 volts. . .	-	0.3	amp

Direct Interelectrode Capacitances (Approx.):

	Without External Shield	With External Shield <sup>o</sup>	
<b>Grid-Drive Operation:</b>			
Grid to plate (Each unit). . .	1.5	1.5	$\mu\mu\text{f}$
Grid to cathode and heater (Each unit). . . . .	2.2	2.2	$\mu\mu\text{f}$
Plate to cathode and heater:			
Unit No.1. . . . .	0.5	1.2	$\mu\mu\text{f}$
Unit No.2. . . . .	0.4	1.5	$\mu\mu\text{f}$
<b>Cathode-Drive Operation:</b>			
Plate to cathode (Each unit) .	0.2	0.2	$\mu\mu\text{f}$
Cathode to grid and heater (Each unit). . . . .	4.6	4.6	$\mu\mu\text{f}$
Plate to grid and heater (Each unit). . . . .	1.8	2.6	$\mu\mu\text{f}$
Heater to cathode (Each unit). .	2.4	2.4*	$\mu\mu\text{f}$

#### Characteristics, Class A<sub>1</sub> Amplifier (Each Unit):

Heater Voltage:

For series connection. . . . .	12.6	volts
For parallel connection. . . . .	6.3	volts
Plate Supply Voltage . . . . .	250	volts
Cathode Resistor . . . . .	200	ohms
Amplification Factor . . . . .	60	
Plate Resistance (Approx.) . . . . .	10900	ohms
Transconductance . . . . .	5500	$\mu\text{mhos}$
Plate Current. . . . .	10	ma
Grid Voltage (Approx.) for plate $\mu_a = 10$ .	-12	volts

#### Mechanical:

Operating Position . . . . .	.Any
Maximum Overall Length . . . . .	2-3/16"
Maximum Seated Length. . . . .	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip). .	1-9/16" $\pm$ 3/32"
Diameter . . . . .	0.750" to 0.875"
Dimensional Outline. . . . .	See General Section
Bulb . . . . .	T6-1/2
Base . . . . .	Small-Button Noval 9-Pin (JEDEC No.E9-1)

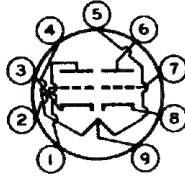
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Basing Designation for BOTTOM VIEW . . . . . 9A

Pin 1—Plate of  
Unit No.2Pin 2—Grid of  
Unit No.2Pin 3—Cathode of  
Unit No.2Pins 4 & 9—Heater of  
Unit No.2Pins 5 & 9—Heater of  
Unit No.1Pin 6—Plate of  
Unit No.1Pin 7—Grid of  
Unit No.1Pin 8—Cathode of  
Unit No.1Pin 9—Heater  
Mid-TapAMPLIFIER — Class A<sub>1</sub>

Values are for Each Unit

## Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE. . . . . 330 max. volts

## GRID VOLTAGE:

Negative-bias value. . . . . 55 max. volts

Positive-bias value. . . . . 0 max. volts

PLATE DISSIPATION. . . . . 2.8 max. watts

## PEAK HEATER-CATHODE VOLTAGE:

Heater negative with  
respect to cathode . . . . . 100 max. voltsHeater positive with  
respect to cathode . . . . . 100 max. volts

\* When the heater is operated from storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. Although such variation in heater voltage is permissible for short periods, reliability can be increased with improved supply-voltage regulation.

○ With external shield JEDEC No.315 connected to heater except as noted.

● With external shield JEDEC No.315 connected to ground.

## SPECIAL RATINGS &amp; PERFORMANCE DATA

## Heater-Cycling Life Performance:

This test is performed on a sample lot of tubes from each production run. A minimum of 2000 cycles of intermittent operation is applied under the following conditions: heater volts = 15 (Series connection) cycled one minute on and one minute off, heater 135 volts positive with respect to cathode, and all other elements connected to ground. At the end of this test, tubes are checked for heater-cathode shorts and open circuits.

## Transconductance at Reduced Heater Voltage:

Average Value (Each unit). . . . . 4400  $\mu$ mhos

With heater volts = 10 (Series connection), plate supply volts = 250, and cathode resistor (ohms) bypassed = 200